

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Onoue Seichi et al.
Appl. No. : 10/596,590
Filed : Jun 16th, 2006
For : Aqueous Coating Composition
Examiner : Karuna P. Reddy
Group Art Unit : 1796

Confirmation No. : 8151

SECOND DECLARATION UNDER 37 C.F.R. §1.132

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I, Seichi Onoue declares and states that:

1. I am a co-inventor of the above identified patent application and familiar with the specification and prosecution history.
2. I received a Master Degree in Engineering in 1999 from the KINKI University.
3. Since 1999, I have been employed by SK KAKEN CO. LTD, and working as an engineer for 9 years.
4. I have prepared Comparative Examples 1-4 thorough 1-6, using a colloidal silica synthesized by adding concentrated hydrochloric acid slowly to sodium as a starting material, in the same manner as the colloidal silica of Storow (see US 3069375, Table-1). The pH of the colloidal silica used in the experiments was adjusted to 8.0, 7.0 and 4.5, respectively, and experiments were conducted in the same manner as described in the

present specification at page 13, and 34-36. The test results are shown in the attached Table 2.

5. As a result, in Comparative Examples 1-4, 1-5, and 1-6, since many ions such as Na ions or those resulted from hydrochloric acid are contained, even if the pH of the colloidal silica is near neutral, electrical conductivity is high. Evaluation using such as colloidal silica showed that it has lower resistance to minitracor afterglow resistance. On the other hand, since the neutral sol of the present application is obtained from hydrolysis of a silicate, it contains few ion components. Therefore, it has been shown that the result of the evaluation using the neutral sol of the present application is excellent.

6. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or patent issuing therefrom.

Dated: January 20, 2009

By: Seiichi Onoue
Seiichi ONOUE

Anti-staining agent J : Colloidal silica (Starting material: Sodium Silicate, pH 8.0, solid content 20wt%, average primary particle diameter 20nm, electrical conductivity 1.9 mS/cm)

Anti-staining agent K : Colloidal silica (Starting material: Sodium Silicate, pH 7.0, solid content 20wt%, average primary particle diameter 20nm, electrical conductivity 1.9 mS/cm)

Anti-staining agent L : Colloidal silica (Starting material: Sodium Silicate, pH 4.5, solid content 20wt%, average primary particle diameter 20nm, electrical conductivity 2.6 mS/cm)

Table 1

	<u>Comparative</u> <u>Example 1-4</u>	<u>Comparative</u> <u>Example 1-5</u>	<u>Comparative</u> <u>Example 1-6</u>
Emulsion A	200 (100)	200 (100)	200 (100)
Coloring pigment	96	96	96
Dispersant A	2	2	2
Dispersant B	0.5	0.5	0.5
Film forming assistant	18	18	18
Thickener	3	3	3
Defoaming agent	3	3	3
<u>Anti-staining agent J</u>	50 (10)	-	-
<u>Anti-staining agent K</u>	-	50 (10)	-
<u>Anti-staining agent L</u>	-	-	50 (10)

Table 2

	<u>Comparative Example 1-4</u>	<u>Comparative Example 1-5</u>	<u>Comparative Example 1-6</u>
Storage stability	x	x	O
Specular gloss	73	65	65
Tack free time (hr)	8	9	8
Area of dropped water stream(cm ²)	14	12	10
Pollution resistance to rain streaking	2	2	2
Efflorescence resistance	x	x	x